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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,489

03/31/2004

Yasushi Aono

04209 /LH

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7590

01/12/2006

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/816,489	Applicant(s) AONO ET AL.	
	Examiner Joshua L. Pritchett	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.  
4a) Of the above claim(s) 4-44 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/04, 3/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This action is in response to Election file November 22, 2005. Claims 1-3 have been elected without traverse.

#### *Election/Restrictions*

Claims 4-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on November 22, 2005. Applicant elected Group I, claims 3-11 and 22-30, without traverse and the species of Fig. 1, claims 1-3, without traverse. The overlapping claims, claims 1-3, will be examined.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Axelrod (“Total Internal Reflection Fluorescence at Biological Surfaces”).

Regarding claim 1, Axelrod discloses a total internal reflection fluorescence microscope comprising at least one objective (objective) lens which takes light from a specimen (Fig. 5); an image pick-up device (PM or video) which picks up an image of the light taken into the objective lens (Fig. 5); an observation optical path via which light taken into the objective lens is condensed onto the image pickup device (Fig. 5); a condenser lens (P) which is disposed in a position facing the objective lens via the specimen (cells) and which has a numerical aperture that makes possible total internal reflection illumination and which guides a transmitted illuminative light into the specimen (Fig. 5 pages 100-101); a laser (page 99) introduction section which allows a laser beam (I) to be incident upon a direction crossing the optical path of the transmitted illuminative light at right angles (Fig. 5) and which introduces in the vicinity of an outermost part of the transmitted illuminative light path (Fig. 5).

Regarding claim 3, Axelrod discloses a laser oscillation unit which outputs the laser beam (I); an optical fiber which transmits the laser beam output from the laser oscillation unit (page 108); a condensing lens (Lens) which converts the laser beam diverged and emitted from an emission end of the fiber into a convergent light to condense the light in the vicinity of a front focal position of the condenser lens (Fig. 5). Axelrod further shows that the condenser lens is capable of converging divergent rays (Fig. 3).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces").

Axelrod teaches the invention as claimed including a mirror (M) but lacks reference to the mirror moving in a direction parallel to the introduced laser beam. Axelrod does teach that the condensing lens (Lens) is capable of movement perpendicular to the laser beam path which would have the same impact on the light introduced to the sample as moving the mirror in a direction parallel to the laser beam path. The effect in both cases would be to change the position of the laser beam on the lens (P) of Axelrod to change the angle of internal reflection thus changing the illumination that is incident to the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the mirror of Axelrod movable in a direction parallel to the laser beam path as is suggested by Axelrod's movement of the condensing lens for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces") in view of Wolf (US 4,972,258).

Axelrod teaches the invention as claimed including the mirror (M) but lacks reference to the mirror moving in a direction parallel to the laser beam optical path. Wolf teaches the mirror

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moves in a direction parallel to the laser beam optical path (abstract). The rotation of the mirror in Wolf would mean a portion of the rotational movement would be in a direction parallel to the optical path and would change the angle of incidence of the light contacting the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Axelrod mirror move in the direction parallel to the laser beam optical path as taught by Wolf for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces") in view of Baer (US 5,866,911).

Axelrod teaches the invention as claimed including the mirror (M) but lacks reference to the mirror moving in a direction parallel to the laser beam optical path. Baer teaches the mirror moves in a direction parallel to the laser beam optical path (col. 11 lines 30-45). The scanning of the mirrors in Baer would mean a portion of the movement would be in a direction parallel to the optical path and would change the angle of incidence of the light contacting the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Axelrod mirror move in the direction parallel to the laser beam optical path as taught by Baer for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

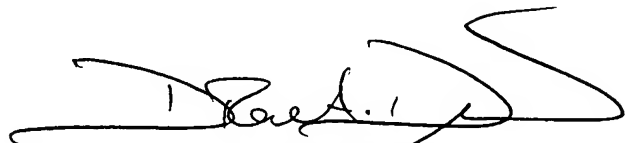
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP 

  
**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**